The Space Operations Officer

Brigadier General Richard V. Geraci, U.S. Army

SIMPLY PUT, the U.S. Army needs a cadre of officers specifically trained in and knowledgeable about space capabilities to address space-related warfighting. To satisfy this requirement, the Army has established a space operations functional area. As the Army identifies requirements and develops capabilities for the space-empowered Objective Force, the Army is integrating these space operations officers into current operations, future planning, research and development, and acquisition positions at all organizational levels of the Army and Department of Defense (DOD). This is a concerted effort to integrate space operations throughout all Army operations and activities.

Our nation's success across the full spectrum of military operations in the 21st century requires officers and leaders who can apply space-based capabilities to warfare. Senior military leaders must understand what space operations officers do and why they are critical to Army and joint operations. Space operations officers are trained to educate leaders and their staffs on all aspects of space operations.

The Army is the world's largest user of space-based capabilities for military purposes. Consider the half-million global positioning system (GPS) receivers on Army systems. The Army also uses space for many other force enhancement capabilities such as long-haul communications and command and control (C2) systems; terrestrial and space weather information; environmental monitoring; positioning, navigation, and timing; intelligence; reconnaissance and space and terrestrial surveillance; critical high-resolution imagery; missile early warning; and advanced targeting capabilities.

Clearly, today's Army operations are significantly enhanced by and often are critically dependent on satellites. Although some officers in other functional areas and basic branches have specialized space-related knowledge, only Army space operations officers have the focused technical space training and the broad space planning skills to provide comprehensive support to the warfighter.

Space control is critical during all phases of military operations and must be integrated into campaign planning, operations orders, and mission execution. Controlling space is essential if the Army is to deny its adversaries the ability to see, target, and harm U.S. forces. The protection afforded U.S. forces by information dominance coming from control of space assets will enhance the protection of our lighter, more deployable future combat systems.

Tomorrow's Objective Force commander requires battlespace knowledge and understanding to maximize the full combat power of his force. This drives the requirement for information reachback and push forward. As the Army continues to experiment, there has been progress in leveraging space to meet commanders' requirements. For example, space technology can provide deploying units the means to exchange critical information via satellite in near real time during en route mission planning. It also provides improved C2 to operate in compartmented and urban terrain as well as timely access to commercial imagery for a clearer battlefield picture.

The Army's increased dependence on space has made our forces vulnerable. This has increased the importance of space control, which includes preventing others from denying us the use of space and preventing them from using space-based capabilities against us.

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and harm U.S. forces. The protection afforded U.S. forces by information dominance coming from control of space assets will enhance the protection of our lighter, more deployable future combat systems. Space control is yet another venue to which the space operations officer brings invaluable expertise.

Space operations officers provide products and services to support the National Command Authorities, national agencies, the U.S. Space Command, all other unified commands, and the operational warfighting elements of all services. They represent the Army in organizations related to space such as the National Reconnaissance Office; the National Security Space Architect; and the Assistant Secretary of Defense for Command, Control, Communications, and Intelligence. Within these organizations, Army space operations officers are space advocates and staff experts for their supported commanders. They are equipped with a broad understanding and knowledge of space-based capabilities, limitations, and vulnerabilities.

Space operations officers facilitate the integration of Army space support teams (ARSSTs) and Joint Tactical Ground Station (JTAGS) units into daily operations. The ARSSTs provide worldwide, on-call, space-based products, services, and expertise that support civil and military operations. The JTAGS provides theater commanders with direct early warning of incoming missile attacks by working with national reconnaissance organizations. Both units provide critical information to the commander and support integrated missile defense operations.

Space operations officers specialize in integrating space operations into the military decisionmaking process (MDMP). They synchronize, optimize, and deconflict the use of space-based resources with the commander's staff and across the battlefield operating systems. Space operation officers provide commanders the space intelligence preparation of the battlefield (IPB), the space intelligence estimate of the situation, and highly technical tools to support operational planning. They prepare the space annex for operations orders and address specific issues from commanders and their staffs concerning enemy space capabilities. Addressing these specific issues improves MDMP by giving the commander and his staff information to conduct IPB and to develop courses of action within the integrated battlespace where we will fight future wars. The space officer's input to courses of action and decision support templates help present a clearer battlespace for the commander.

Army space operations officers work to complement the actions and responsibilities of the signal, intelligence, information operations, and engineering staff officers. They are trained to understand, enable, and improve on how to use space and to know the space-based products that they require and produce. Not only do they understand the capabilities and needs of the other services, but they also understand other government agencies and how they use space. A space operations officer complements and focuses space-related activities across all the battlefield operating systems as well as the battlefield functional areas that the Army is addressing in its Objective Force.

Even soldiers in the field benefit from the union of lightweight computing devices and space-based capabilities.

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This space expertise, coupled with operational and tactical expertise, clearly marks space operations officers as important members of the commander's staff.

Space-based capabilities support the Army across the full spectrum of military operations, from humanitarian operations through high-intensity conflict. For example, during training for a disaster relief mission, an ARSST—led by a space operations officer and specializing in exploiting commercial satellite imagery—worked with I Corps at Fort Lewis, Washington, to release maps and satellite imagery to coalition forces that normally do not have access to national imagery. During summer 2000, an ARSST provided this same service to the U.S. Forest Service when it was fighting fires in the western United States.

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To help protect American peacekeepers in Kosovo, Army space forces deployed space support teams to provide Joint Task Force (JTF) Hawk's commander with space expertise and space-based products. The team created three-dimensional "fly-through" training aids for the JTF's aviation unit. It also developed a space battle update briefing and provided a daily satellite update for all mission areas.

Since Desert Storm, the Army has used space assets in high-intensity conflict exercises and wargames. During one such exercise, a space operations officer identified the impact of a solar event on signals intelligence (SIGINT) collection. Before deployment, he coordinated with the U.S. Air Force's space weather squadron for daily space weather support. The squadron also provided information on the very high frequency (VHF) and high frequency (HF) propagation windows to achieve the maximum and minimum usable frequencies for VHF and HF during the forecasted atmospheric conditions. Understanding the enemy's vulnerabilities and knowing when a significant solar event would severely degrade HF communications allowed the space operations officer to recommend a course of action to enhance the intelligence staff's SIGINT collection.

Army space operations officers provide the link between the field and the combat developer. They contribute to the development of space doctrine and space tactics, techniques, and procedures. They ensure that operational, planning, and training documents that address space adequately and accurately support the warfighters. Because the Army has unique space requirements, space operations officers assist in identifying Army space requirements across all components, branches, and battlefield operating systems. They focus on turning the latest space technology into unrivaled capabilities for commanders and soldiers in the field.

While the goal of Army leadership is to normalize space and military operations across the Army, the nearly 120 space operations officers are the only officers solely dedicated to space operations. Space operations officers can contribute to the evolution of domestic and international space policy. That policy can be translated into effective joint and Army doctrine and concepts for defensive and offensive actions to support our regional commanders in chief.

Since Desert Storm, the Army and DOD have made significant progress in understanding space and warfare. Army space operations officers understand how to maximize the use of space-based assets and identify new requirements to enhance our Army's warfighting capabilities. These officers are trained and prepared to be an integral part of the Army's Objective Force. They form a space-smart cadre able to exploit space for the Army today and in the future. The addition of space operations officers has better prepared the Army to deal with space and its effect on 21st-century warfare. ***MR***

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